

Aviation Services

Vision

NWS personnel who are organized, equipped, and trained to enhance the FAA's extraordinary responsibility of conducting a safe and efficient National Airspace System (NAS).

Concept of Operations

To improve weather forecasting to meet consistency and timeliness demands of the NAS, as directed by the FAA. The NAS represents the overall environment for the safe and efficient operation of aircraft, including the aircrafts, pilots, facilities, tower controllers, terminal area controllers, en route controllers, oceanic controllers, computers, satellite navigation aids, radars, airports, maintenance personnel, and the airline dispatchers.

NWS will be better prepared to enhance and sustain NAS operations in the future by improving:

- ✓ Accuracy of information
- ✓ Timeliness of information
- ✓ Relevance to the operational user
- ✓ Unity of effort: one NAS, one forecast readiness

Customer and Partner Requirements

Improved forecast accuracy, with emphasis on 2-6 hour forecast time frame, for the aviation parameters of convection, turbulence, icing, and cloud ceiling/visibility.

pecific improvements in: Number of Terminal Aerodrome Forecast (TAF) locations supported Airport specific aviation products Improved training and awareness of weather products for pilots and forecasters A user-driven product requirements process Routine verification and results shared with users on all aviation products

Product and Service Change

- ✓ Continue developmental work on Graphical Area Forecast (GFA).
- ✓ Make Aviation Digital Database System (ADDS) operational.
- ✓ Import satellite and radar data to System for Convective Analysis and Nowcasting
- ✓ (SCAN) to enhance the Aviation Forecast
- ✓ Preparation System (AvnFPS) and provide amendment capabilities.
- ✓ Issue official Forecast Icing Potential (FIP) product.



Other Performance Measures

Starting in 2004, Aviation Services will focus on developing and delivering accurate and operationally relevant aviation weather observations and forecasts using the following performance measures for implementation in FY 06:

- ✓ NAS delays due to weather, or weather support
- ✓ NAS airport forecast coverage, including number of TAFs produced

Performance Measures

3 Mile Visibility / 1000 foot ceilings	2002	2003	2004
Probability of Detection	45	45	46
False Alarm Ratio	71	71	70

- ✓ Convective delays and Collaborative Convective
- ✓ Forecast Product (CCFP) performance
- ✓ TAFs and their affect on system capacity
- ✓ Ceiling/visibility forecasts—monetary impacts to operations
- ✓ Fog forecasts—monetary impacts to operations
- ✓ Winter weather forecasts— monetary impacts to operations

Milestones by Quarter

1st Quarter

- ADDS becomes operational.
(Milestone met, 1st quarter)

- Release MakeTAF with National Climatic Data Center (NCDC) data to all field sites.
(Milestone met, 1st quarter)
- Begin development of Distance Learning Aviation Course (DLAC)/2 Convection.
(Milestone met, 1st quarter)

2nd Quarter

- Implement and deploy AvnFPS version 2.0.
- Release statistics on demand, in new aviation verify format.
- Implement statistics on demand with individual forecaster verification.
- Implement AvnFPS 3.0.

3rd Quarter

- Complete FAA / NWS Interagency Agreement on Center Weather Service Units (CWSU).
- Implement AvnFPS 4.0.
- Improve MakeTAF interface based on field input.

4th Quarter

- Test DLAC2/Convection.
- Transition to the final phase of the World Area Forecast System (WAFS).
- Draft Joint Planning Office (JPO) strategic vision for aviation weather.

Integrated Requirements Supporting Service Programs

- ✓ Import National Convective Weather Forecast (NCWF) into AWIPS/OB3.
- ✓ Expand NDFD to four dimensional products.
- ✓ Expand Meteorological Data and Collection Reporting System (MDCRS) by placing water vapor sensors on commercial aircraft

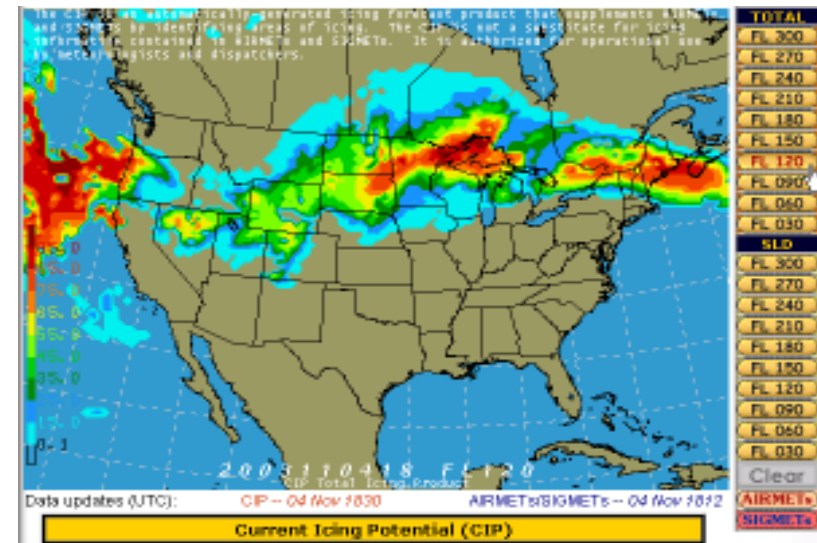
Link to Science and Technology Infusion Plan

Increase the accuracy, specificity, and lead time of aviation forecast and warnings for more effective planning and decision making by:

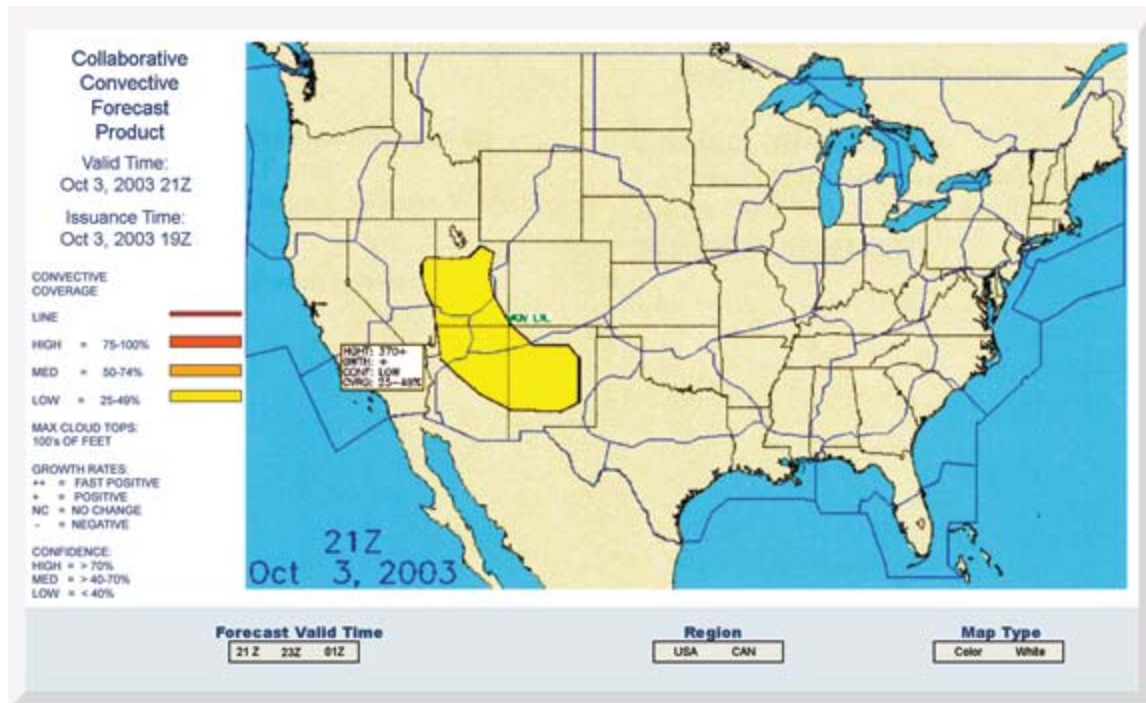
- ✓ Increasing the resolution of wind and temperature observations
- ✓ Improving the data quality and timeliness of wind and moisture observations
- ✓ Expanding aircraft targeting, winds, and aircraft observations
- ✓ Improving model physics (Regional Common Atmospheric Modeling System) with rapid refresh
- ✓ Incorporating 3-Dimensional forecast grids in IFPS

Training

- ✓ Continue DLAC-1, Low-Cloud and Fog Forecasting. Information on DLAC1 can be found at: <http://meted.ucar.edu/dlac/web-site/index.htm>.
- ✓ Develop and test DLAC-2, Convective Forecasting, at the Cooperative Program for Operational Meteorology, Education and Training.
- ✓ Partner with Aircraft Owners and Pilots Association (AOPA), and Air Safety Foundation to develop a training program for general aviation pilots in the interpretation of aviation weather products.
- ✓ Develop training for the Current Icing Potential (CIP) and the FIP products for use in CWSU and Aviation Weather Center (AWC)



The Current Icing Potential (CIP) is an automatically generated icing diagnostic product that supplements NWS's AIRMETs and SIGMETs. The CIP is issued hourly.



*Collaborative Convective
Forecast Product*

Outreach

Aviation Services will participate in the following outreach activities:

- ✓ Work closely with the FAA and NASA to foster better working relationships and to facilitate requirements setting.
- ✓ Work closely with aviation industry representatives such as AOPA, the National Business Aviation Association (NBAA), the Air Transport Association (ATA), the International Air Transport Association (IATA), the Small Aircraft Manufacturers Association (SAMA), the Helicopter Association

International (HAI), and the Experimental Aircraft Association (EAA) to foster better relationships, to promote NWS aviation products and services, and to ascertain additional customer requirements.

- ✓ Support trade shows such as AOPA National and local Fly-Ins, NBAA National Meeting, HAI International Meeting, and 2004 EAA Sun'n Fun Fly-In and Air Venture.
- ✓ Attend meetings of the International Civil Aviation Organization (ICAO) to participate in international requirements setting for aviation meteorology and development of forecasting tools such as the automated Aerodrome Meteorological Forecast

Dissemination

- ✓ Aviation Digital Database becomes operational.
- ✓ Transition to final phase of WAFS.

Verification

Aviation services will continue using the expanded collection of pilot reports at the AWC and Forecast Systems Laboratory's (FSL's) Real Time Verification System (RTVS). In addition, aviation services intends to increase verification ability to capture and score all centralized products at AWC and the Alaska Aviation Weather Unit (AAWU).

Regional Initiatives

Alaska

- ✓ Complete test of the Alaska Airport Specific TAF Amendment Criteria.
- ✓ Collaborate with AWC to develop an experimental GFA at AAWU.
- ✓ Collaborate with the Alaska Aviation Safety Foundation and the Medallion Foundation to develop aviation weather training for pilots for Alaska Aviation Safety Outreach.

Eastern

- ✓ Develop performance measures for individual TAF sites.
- ✓ Hold Eastern Region Aviation Workshop.

Central

- ✓ Review Best Practices based on AVTNverify.

Southern

- ✓ Complete tests of the Tactical Convective Hazards Product at the Prototype Aviation Collaborative Effort (PACE) at the Dallas/Fort Worth CWSU.

Western

- ✓ Complete the San Francisco Fog and Stratus Project.

Pacific

- ✓ Host annual local Aviation Users Workshop at WFO Guam.
- ✓ Expand the number of sites for Winds/Temperature Aloft Forecasts to cover much of the Pacific by transferring responsibility from WFO Honolulu to NCEP.
- ✓ Develop Aviation Area Forecast products for Marshall Islands and the Federated States of Micronesia.
- ✓ Implement conditional climatology program to assist TAF creation.

Contact Information

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